



NASA ASTROBIOLOGY INSTITUTE ANNUAL REPORT YEAR 6

[July 2003 - June 2004]

Annual Reports :: Year 6 :: Ames Research Center

Project Report: Habitable Planets

Adams, F., Hollenbach, D., Laughlin, G. & Gorti, U. (In Press, 2004). Photoevaporation of circumstellar disks due to external FUV radiation in stellar aggregates. *Astrophysical Journal*.

Colaprete, A. & Toon, O.B. (2003). Carbon dioxide clouds in an early dense martian atmosphere. *Journal of Geophysical Research – Planets*, 108 (E4): 5025.

Davis, S.S. (2004). A beta–viscosity model for the evolving solar nebula [Abstract]. Workshop on Modeling the Structure, Chemistry, and Appearance of Protoplanetary Disks, April 13–17, 2004, Bavaria, Germany.

Davis, S.S. (Submitted, 2004). Condensation front migration in a protoplanetary nebula. *Astrophysical Journal*.

Heldmann, J.L. & Mellon, M.T. (2003). Observations of Martian gullies and constraints on potential formation mechanisms. *Icarus*, 168: 285–304.

Heldmann, J.L., Toon, O.B., Pollard, W., Mellon, M., Pitlick, J., McKay, C.P. & Andersen, D.T. (Submitted, 2004). Formation of martian gullies by the flow of simultaneously freezing and boiling liquid water. *Journal of Geophysical Research*.

Hollenbach, D. & Adams, F. (In Press, 2004). Dispersal of disks around young stars: Constraints on Kuiper Belt formation. In: D. Backman & L. Caroff (Eds). *Debris Disks and the Formation of Planets*. San Francisco, CA: Astronomy Society of the Pacific Press.

Hollenbach, D. & Adams, F. (In Press, 2004). The disruption of planet-forming disks. In: D. Lin, D. Neufeld, & E. Ostriker (Eds.). *Star Formation in the Interstellar Medium*. Provo, UT: Publications of the Astronomical Society of the Pacific.

Laughlin, G. (2003). [Review of the book The Life and Death of Planet Earth, by P.D. Ward & D. Brownlee]. *Mercury*, 32 (4): 45.

Laughlin, G. (2004). Taking the galactic planetary census [Abstract]. Special Session: Are We Alone? AbSciCon 2004, NASA Ames Research Center, Moffett Field, CA. International Journal of Astrobiology, Supplement 1 (March): 3.

Laughlin, G. & Castellano, T. (2004). Transitsearch.org [Online] website: <http://www.transitsearch.org>

Rabbette, M., Young, R., McKay, C., Pilewskie, P. & Clanton, S. (2004). A possible thermal instability in the greenhouse effect on Earth and its implication for other planets. [Abstract]. Abstract for Poster Presentation, Director's Discretionary Fund, NASA Ames Research Center, Moffett Field, CA.

Rabbette, M., Young, R.E., McKay, C.P., Pilewskie, P. & Clanton, S. (Submitted, 2004). The tropical clear sky runaway greenhouse effect. *Geophysical Research Letters*.

Richard, D. & Davis, S.S. (2004). A note on transition, turbulence length scales and transport in differentially rotating flows. *Astronomy & Astrophysics*, 416: 825–827.

Sandford, S.A. (In Press, 2004). Organic synthesis in space. In: M. Livio, N. Reid & W. Sparks (Eds.). *The Astrophysics of Life*. Cambridge, England: Cambridge University Press.

Segura, T.L., Toon, O.B. & McKay, C.P. (2004). An impact-triggered runaway greenhouse on Mars [Abstract]. Sixth International Conference on Mars, Pasadena, CA.

Segura, T.L., Toon, O.B. & Colaprete, A. (2003). Time-dependent calculations of an impact-triggered runaway greenhouse atmosphere on Mars [Abstract]. Sixth International Conference on Mars, Pasadena, CA, July, 2003.

Segura, T.L., Toon, O.B. & McKay, C.P. (2004). An impact-triggered runaway greenhouse on Mars [Abstract]. AbSciCon 2004, NASA Ames Research Center, Moffett Field, CA. International Journal of Astrobiology, Supplement 1 (March): 78.

Trainer, M.G., Pavlov, A.A., Curtis, D.B., McKay, C.P., Worsnop, D.R., Delia, A.E., Toohey, D.W., Toon, O.B. & Tolbert, M.A. (Submitted, 2004). Haze aerosols in the atmosphere of early Earth: Manna from heaven. *Astrobiology*.

Trainer, M.G., Pavlov, A.A., Jimenez, J.L., McKay, C.P., Worsnop, D.R., Toon, O.B. & Tolbert, M.A. (Submitted, 2004). Chemical composition of Titan's haze: Are PAHs present? *Geophysical Research Letters*.